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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.		*Total Pages*	49
First Named Inventor or Application Identifier			
SEISHI EJIRI			
Express Mail Label No.			

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. [X] Fee Transmittal Form *(Submit an original, and a duplicate for fee processing)*

2. [X] Specification *Total Pages* 32

3. [X] Drawing(s) *(35 USC 113)* *Total Sheets* 11

4. [ ] Oath or Declaration *Total Pages*
   - a. [ ] Newly executed (original or copy)
   - b. [ ] Copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 17 completed)* ***[Note Box 5 below]***
     - i. [ ] DELETION OF INVENTOR(S) Signed Statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

5. [ ] Incorporation By Reference *(useable if Box 4b is checked)* The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. [ ] Microfiche Computer Program *(Appendix)*

7. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   - a. [ ] Computer Readable Copy
   - b. [ ] Paper Copy (identical to computer copy)
   - c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))

9. [ ] 37 CFR 3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney

10. [ ] English Translation Document *(if applicable)*

11. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations

12. [ ] Preliminary Amendment

13. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*

14. [ ] Small Entity [ ] Statement filed in prior application
    Statement(s) Status still proper and desired

15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*

16. [X] Other: Transmittal Letter under 37 C.F.R. § 1.53 and MPEP § 601.01

17. If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information:*
    [ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No. ___/_____

18. CORRESPONDENCE ADDRESS

[ ] Customer Number or Bar Code Label (Insert Customer No. or Attach bar code label here) or [X] Correspondence address below

NAME	FITZPATRICK, CELLA, HARPER & SCINTO				
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Country	U.S.A.	Telephone	212-758-2400	Fax	212-758-2982

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	20 - 20 =	0	X $ 22.00 =	$0
	INDEPENDENT CLAIMS (37 cfr 1.16(b))	7 - 3 =	4	X $ 82.00 =	$ 328.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			$270.00 =	$0
				BASIC FEE (37 CFR 1.16(a))	$ 790.00
			Total of above Calculations =		$1,118.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				
				TOTAL =	$1,118.00

19. Small entity status

a. ☐ A Small entity statement is enclosed

b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.

c. ☐ Is no longer claimed.

20. ☒ A check in the amount of $ 1,118.00 to cover the filing fee is enclosed.

21. ☐ A check in the amount of $ _____ to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

a. ☒ Fees required under 37 CFR 1.16.

b. ☒ Fees required under 37 CFR 1.17.

c. ☒ Fees required under 37 CFR 1.18.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED	
NAME	Abigail F. Cousins
SIGNATURE	Abigail Cousins, Reg No. 29,292
DATE	December 22, 1997

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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
SEISHI EJIRI	:	Examiner: Not Yet Assigned
	)	
	:	Group Art Unit: Not Yet Assigned
Application No.: Not Yet Assigned	)	
	:	
Filed: Concurrently Herewith	)	
	:	
For: DATA COMMUNICATION SYSTEM	)	
	:	Date: December 22, 1997

Assistant Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL LETTER UNDER 37 C.F.R. § 1.53
AND M.P.E.P. § 601.01

Sir:

Enclosed herewith for filing is a specification under 37 C.F.R. § 1.71; claims under 37 C.F.R. § 1.75; and drawings under 37 C.F.R. § 1.81 for a patent application for DATA COMMUNICATION SYSTEM on behalf of the inventor under 37 C.F.R. § 1.41(c), Seishi Ejiri, having a post office address of 6-1-1-104, Shimokodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa-ken, Japan.

Priority is based upon Japanese Patent Application No. 348049/1996 dated Decmber 26, 1996.

The undersigned is authorized to file the subject application on behalf of the inventor.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 758-2400. All correspondence should be directed to our below listed address.

Respectfully submitted,

Abigail Cousins

Attorney for Applicant(s)

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DOCKET ALARM

TITLE OF THE INVENTION

DATA COMMUNICATION SYSTEM

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a data communication system for transmitting data to a transmission destination and, more particularly, to a data communication system capable of connecting a computer terminal.

Description of the Related Art

As a conventional data communication system, a system in which a facsimile apparatus and a personal computer (PC) are connected to each other to transmit facsimile data according to a request from the PC or to transfer data received or read by the facsimile apparatus to the PC is known. A stand-alone type facsimile apparatus which performs not only an operation based on PC control but also a function of transmitting facsimile data according to a designation from the operation unit of the facsimile apparatus is also known.

It is also known that a facsimile apparatus is connected to a local area network (LAN) to which a

plurality of PCs are connected to exchange data between the PCs on the LAN and the facsimile apparatus. Transmission of original information is designated by an application installed in the PCs on the LAN, and the original information is transferred to the facsimile apparatus to transmit the information to a transmission destination. Log information related to this transmission is managed by the application on the PCs.

However, when a conventional facsimile apparatus transmits data according to a designation from the operation unit of the facsimile apparatus, even if a PC is connected to the facsimile apparatus, information related to this transmission such as a transmission destination, transmission time, and a transmission result cannot be known on the PC side. Therefore, information related to transmission cannot be managed together.

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SUMMARY OF THE INVENTION

It is an object of the present invention to provide a data communication system which is free from the above problems.

It is another object of the present invention to provide a data communication system in which log information related to data communication based on a manual operation of the data communication system can be

managed in units of users.

It is still another object of the present invention to provide a data communication system in which data communication based on a designation from a data processing apparatus and data communication based on manual transmission of the data communication system can be easily managed together.

The above object and the other objects of the present invention will be apparent from the following detailed description based on the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic block diagram showing the arrangement of a facsimile apparatus according to the first embodiment of the present invention.

FIG. 2 is a flow chart showing a flow of processes performed by the facsimile apparatus in FIG. 1.

FIG. 3 is a flow chart showing a flow of processes performed by the facsimile apparatus in FIG. 1.

FIG. 4 is a flow chart showing a flow of processes performed by a PC 118.

FIG. 5 is a schematic block diagram showing the arrangement of a facsimile apparatus according to the second embodiment of the present invention.

FIG. 6 is a view showing a form in which the

facsimile apparatus is connected to a network.

FIGS. 7A and 7B are views showing information managed by the storage device of a server machine 202.

FIG. 8 is a flow chart showing a flow of processes performed by a facsimile apparatus 201.

FIG. 9 is a flow chart showing a flow of processes performed by a facsimile apparatus 201.

FIG. 10 is a flow chart showing a flow of processes performed by the server machine 202.

FIG. 11 is a flow chart showing a flow of processes performed by a client machine.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Embodiments of the present invention of the present invention will be described below with reference to the accompanying drawings.

(First Embodiment)

FIG. 1 is a block diagram showing the arrangement of a facsimile apparatus according to an embodiment of the present invention.

Referring to FIG. 1, a CPU 101 is a system controller for controlling the system as a whole. A ROM 102 stores a control program for the CPU 101. A RAM 103 is constituted by an SRAM or the like to store program control variables or the like. Set values such as

destination information, management data of the system, and various work buffers which are registered by an operator are also stored in the RAM.

An image memory 104 is constituted by a DRAM or the like to accumulate image data. A resolution conversion processor 105 performs resolution conversion control such as millimeter-inch conversion of raster data. A communication coding/decoding processor 106 performs communication coding when a coding scheme in a reading/recording operation is different from a coding scheme in communication. A reading/recording coding/decoding processor 107 performs a coding/decoding process for image data in a reading/recording operation.

A MODEM 108 modulates/demodulates a facsimile transmission/reception signal, and an NCU 109 has a function of transmitting a selection signal (dial path or tone dialer) to a communication line (PSTN) 119 and also performs an automatic incoming operation by detecting a calling tone.

A scanner 111 is constituted by a CS image sensor, an original convey mechanism, and the like to optically read an original to electrically convert the read data into an image data. An image processor 110 performs a correction process to the read image data to output high-precision image data.

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An operation unit 112 is constituted by a keyboard or the like, and is used when an operator performs various input operations. An outside display unit 113 is used to cause an LCD, an LED, or the like to perform notification by a display to a user.

When file data from a PC or the like is printed, a printer formatter 114 analyzes a printer description language to convert the data into image data. A printer 115 is a device for recording a reception image or a file data on a sheet of recording paper as a visible image.

A PC interface controller 116 performs data processing to exchange data with a PC. The PC interface controller 116 is connected to PC (Personal Computer) 118 through a PC i/f 117.

This facsimile apparatus not only transmit facsimile data on the basis of a designation from the operation unit 112 but also receives a transmission designation command from the PC 118 through the PC i/f 117 to transmit facsimile data.

FIG. 2 is a flow chart showing a flow of processes performed when image data is transmitted by an operation from the operation unit 112 of the facsimile apparatus in FIG. 1. This flow chart shows a flow of control performed by the CPU 101 on the basis of program data stored in the ROM 102.

When it is detected that a destination designation key, e.g., a one-touch dial key or a compaction dial key, on the operation unit 112 is pressed by an operator (step S1), destination information in the RAM 103 corresponding to the pressed destination designation key is checked (step S2). If the contents of the information are invalid or do not correspond to any data, an error end process is performed.

If the contents are valid data, corresponding destination information is displayed on the outside display unit 113 (step S3). Thereafter, when a key operation for fixing a destination is performed or a predetermined period of time has elapsed (step S4), after fixing conditions are established, destination information is fixed (step S5).

After a transmission acceptance number and transmission acceptance time which are inherent in each communication are set (step S6), the image of an original on an original table of the scanner 111 is read, and the facsimile data (read image data) is transmitted to the destination fixed in step S5 through the communication line (PSTN) 119 according to T.30 of ITU-T (step S7). Upon completion of transmission, transmission information is automatically notified to the PC 118 through the PC interface 117.

The notification of transmission information may be performed at once after the transmission. Each time a transmission state changes, necessary information may be notified one by one at timings such as a dial start timing, a previous procedure start timing, an image data transmission start timing of each page, or a communication end timing.

FIG. 3 is a flow chart showing a flow of transmission information notification processes in step S8 in FIG. 2.

When the notification timing has been set in the RAM 103, and the notification is performed at once upon completion of the transmission, all the pieces of transmission information are notified to the PC 118 at once. When the pieces of transmission information are designated to be notified one by one each time a transmission state changes, each time a piece of transmission information to be notified is fixed, one piece of transmission information is notified to the PC 118.

Of transmission information to be notified such as information related to a transmission destination, transmission start/end time, a communication time, a communication result (OK or NG), and the number of transmission pages, pieces of fixed information are set

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in a notification data buffer in the RAM 103 (step S11). A setting for determining whether the transmission information includes transmission image data is checked (step S12). When the transmission image data is set to be notified, the identification information of the transmission image data is set (step S13).

It is checked whether the PC 118 can give or receive data (step S14). If the PC 118 can give or receive data, the data is transferred on the basis of information set in the notification data buffer (step S15). If the PC 118 cannot give or receive data, or the transfer operation is not normally ended after the transfer operation is ended (step S16), the data is stored as unnotified information on the basis of data in the notification data buffer (step S19). A method of accumulating data in the RAM 103 as a file or a method of writing data in a storage data region in the RAM 103 may be used. At this time, an unnotified information count is incremented by 1 (step S20).

If the transmission information notification is normally ended, the value of the unnotified information counter is checked (step S17). If the value is not 0, the value of the unnotified information counter is decremented by 1, and the flow returns to step S11 to repeat transmission information notification. If the

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value is 0, the operation is ended.

In FIGS. 2 and 3, although information is notified from the facsimile apparatus to the PC 118, the PC 118 may ask the facsimile apparatus to acquire information.

FIG. 4 is a flow chart showing a flow of processes performed by the PC 118. This flow chart shows a flow of processes performed by the CPU of the PC 118 on the basis of a program installed in a hard disk of the PC 118.

The PC 118 transmits a command to a facsimile apparatus through the PC i/f (step S21). If this command is a transmission request command, transmission image data, destination information, and the like are transferred to the facsimile apparatus to cause the facsimile apparatus to transmit the transmission image data to the destination (step S22).

On the other hand, if the command is a polling command, information in a predetermined area of the RAM 103 of the facsimile apparatus is checked. In this case, it is checked whether information representing whether various pieces of information in the RAM 103 or the state of the system changes. If the information or state changes, the corresponding information is drawn.

In step S23, it is checked whether the information is local transmission information, i.e., information related to transmission based on a designation from the

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operation unit 112 of the facsimile apparatus. If YES in step S23, this information is acquired (step S24), information for determining local transmission or remote transmission and the above transmission information are stored in the hard disk of the PC 118 (step S25).

In step S26, it is checked whether the information is remote transmission information, i.e., information related to transmission based on a transmission request command from the PC 118. If YES in step S26, the transmission information is acquired as described above (step S27), and the transmission information is stored (step S28).

The information stored in step S25 or S28 can be displayed on the display unit or printed out by the printer if necessary.

(Second Embodiment)

FIG. 5 is a block diagram showing the arrangement of a facsimile apparatus according to the second embodiment.

Since the same reference numerals as in FIG. 1 denote the same parts in FIG. 5, a description thereof will be omitted.

A LAN controller 120 performs data processing to exchange data with a server or a terminal on a wire LAN 124 or a radio LAN 125. A wire LAN i/f 122 is an interface for connecting the facsimile apparatus to the

wire LAN 124, and a radio LAN i/f 123 is an interface for connecting the facsimile apparatus to the radio LAN 125. The wire LAN i/f 122 and the radio LAN i/f 123 are controlled by a wire/radio LAN controller 121. The NCU 109 in FIG. 5 has a function of transmitting a selection signal (dial pulse or tone dialer) to the wire communication line 119 through a wire line i/f 127 and a function of transmitting the selection signal to a radio communication line 129 through a radio line i/f 128. A wire/radio line controller 126 controls the wire line i/f 127 and the radio line i/f 128. A LAN user information storage memory 130 is a memory for storing information related to a user or a client on a network. The information is displayed on the outside display unit 113 under the control of the operation unit 112, and is selected by an operator. The operation unit 112 in FIG. 5 includes the LAN user destination selection means.

FIG. 6 is a view showing the arrangement of a network to which the facsimile apparatus shown in FIG. 5 is connected.

Reference numeral 201 denotes the facsimile apparatus shown in FIG. 5 which can be connected to the wire LAN 124 and the radio LAN 125.

Reference numeral 202 denotes a server machine of a LAN to which the facsimile apparatus 201 is connected.

The server machine manages the LAN in a large-capacity storage device and files on the LAN. A management process and data for a client or a user on the LAN are set in the server machine.

Reference numerals 203 and 204 denote client machines (information processing terminals) such as personal computers connected to the wire LAN 124.

Reference numeral 205 denotes a printer server which accepts a print request from the client machine to perform a control operation for outputting data to be printed to a printer. Reference numeral 206 denotes a printer for outputting image data onto a sheet of recording paper as a visible image.

Reference numeral 207 denotes a client machine connected to the radio LAN 125.

Reference numeral 208 denotes a facsimile apparatus which communicates with the facsimile apparatus 201 through the PSTN 119.

Reference numeral 209 denotes a radio base station which performs facsimile communication with the facsimile apparatus 201 through the radio line i/f 128. The radio base station 209 is connected to a wire communication line network through the PSTN 119.

FIGS. 7A and 7B are views showing the contents of management information for a user and a client on a LAN

managed by the server machine 202. The management information is stored in the storage device of the server machine 202.

As the user information, information related to an authorized user on the LAN is managed. A user name and a host name of a host machine which a user logs in are managed for each user. A user name and a login host name are data of a text string which can be read by the CPU of the server machine 202.

As the client information, information related to a client machine connected to a LAN is managed. A host address on a network of the client machine and the state of the client machine are managed for each client. The host address is used as data such as 123. 456. 789. 001 in TCP/IP protocol, and connection and non-connection are used as the state of the client machine.

FIG. 8 is a flow chart showing a flow of processes performed when image data is transmitted by an operation from the operation unit 112 of the facsimile apparatus 201. This flow chart shows a flow of control performed by the CPU 101 on the basis of program data stored in the ROM 102.

When it is detected that a destination designation key, e.g., a one-touch dial key or a compaction dial key, on the operation unit 112 is pressed by an operator (step

S31), destination information in the RAM 103 corresponding to the pressed destination designation key is checked (step S32). If the contents of the information is invalid or do not correspond to any data, an error end process is performed.

If the contents are valid data, corresponding destination information is displayed on the outside display unit 113 (step S33). Thereafter, a key input operation for designating an operator (user name) and a key operation for fixing a destination are performed, or the CPU waits until a predetermined period of time has elapsed (step S35). When the key for designating an operator is pressed (step S34), it is determined whether corresponding operator information is stored in the RAM 103 (step S41). If the information is stored in the RAM 103, the operator information is displayed (step S42). After fixing conditions are established, the destination information and the operator information are fixed (step S36).

After a transmission acceptance number and transmission acceptance time which are inherent in each communication are set (step S37), the image of an original on an original table of the scanner 111 is read, and the facsimile data (read image data) is transmitted to the destination fixed in step S36 through the

communication line 119 or 129 according to T.30 of ITU-T (step S38). Upon completion of transmission, it is checked whether operator information is designated (step S39). If the operator information is designated, transmission information and the operator information are notified to the server machine 202 through the wire LAN i/f 122 (step S40).

The notification of transmission information may be performed at once after the transmission. Each time a transmission state changes, necessary information may be notified one by one at timings such as a dial start timing, a previous procedure start timing, an image data transmission start timing of each page, a communication end timing. In addition, no operator information is designated, data representing that an operator is not known and the transmission information may be notified.

FIG. 9 is a flow chart showing a flow of transmission information notification processes in step S40. The flow of processes is substantially the same as that in the flow chart shown in FIG. 3 except for the following points. That is, the information set in step S11 in FIG. 3 and the operator information fixed in step S36 are set in step S51, the PC in step S14 in FIG. 3 is replaced with the server machine 202 in step S54, and transmission information including operator information

is transferred. The image data transmitted to a destination is also transferred in step S55.

Processes performed by the server machine 202 will be described below.

FIG. 10 is a flow chart showing a flow of control executed by the CPU of the server machine 202 on the basis of program data installed in a storage device arranged in the server machine 202.

In step S61, it is checked whether a command from a client machine on the LAN is received through the wire LAN i/f 122 or the radio LAN i/f 123. If the command is received, it is checked whether the command is a transmission request (step S62). If the command is a transmission request, transmission request data is transferred to the facsimile apparatus 201 together with data to be transmitted (step S69).

If it is determined in step S63 that the command is a information acquisition request, the flow shifts to step S64 to check whether transmission information which is requested (corresponds to an operator (user) who requests) is stored in the storage device of the server machine 202. If the transmission information is stored, operator information, transmission information including information representing local transmission or remote transmission, and image data corresponding to the

transmission information are transferred.

On the other hand, if information to be transferred is not stored in the storage device in step S64, it is asked whether the corresponding transmission information is stored in the RAM 103 of the facsimile apparatus 201 (step S67). If YES in step S67, the transmission information is acquired and set in the storage device (step S68). The transmission information is transferred in step S65.

Processes performed by a client machine (e.g., the client machine 203, 204, or 207) according to the second embodiment will be described below. Here, in particular, acquisition and storage of transmission information, a display of the transmission information, and the like are described.

FIG. 11 is a flow chart showing the flow of the processes based on an application program installed in the client machine. This flow chart shows the flow of control performed by the MPU of the client machine to read and execute a program installed in the hard disk managed under the control of the MPU.

In step S71, the application program is started. This application program exchanges data with the facsimile apparatus 201 through the wire LAN 124 and the radio LAN 125 to perform management and processes for

image data or information related to the image data.

In step S72, it is checked whether a user performs a login procedure to the wire LAN 124 or the radio LAN 125. If YES in step S72, the flow shifts to step S73 to check whether transmission information (including image data) which has not transferred is stored in an area corresponding to a login user name in the storage device of the server machine 202.

If the transmission information which has not transferred is stored, the flow shifts to step S74 to read and receive the transmission information by transmission of a command. The received transmission information is stored in the hard disk of the client machine in step S75 in such a manner that the image data is caused to correspond to the information related to the image data. Here, the image data is image data obtained by reading an original by the scanner 111 of the facsimile apparatus 201, and the related information includes destination information, a transmission acceptance time/date, an acceptance number, a transmission time/date, the number of pages, an image size, a resolution, information representing transmission success/failure (also representing the contents of an error), information representing local transmission or remote transmission, and the like when the image data is

transmitted through the PSTN 119 or the radio communication line 129.

In step S76, it is checked whether the display of transmission information is selected. If the display of transmission information is selected, the flow shifts to step S77 to display the image of transmission information selected by a designation of a user and information related to the transmission information on the display unit of the client machine. Here, transmission information can be designated by searching performed by various methods such as inputting of acceptance number and inputting of transmission destination. At this time, information representing local transmission performed by an operation from the operation unit 112 of the facsimile apparatus 201 or remote transmission for causing the facsimile apparatus 201 to transfer and transmit image data to the facsimile apparatus 201 by a command output from the client machine and using the application program is also displayed.

In step S78, it is determined checked that still another process, e.g., print out, a designation of another transmission, or erasing of data is performed. If YES in step S78, the process is executed in step S79.

According to the embodiments described above, not only information related to transmission performed by a

remote operation from a PC or the like but also information related to transmission performed by a local operation from the operation unit of the facsimile apparatus can be managed together in the PC side. This is an advantage for a user who generally works on the PC side. In addition, since remote transmission and local transmission are independently managed on the PC side, the conditions can be easily recognized. Since an image is also displayed, a user can more easily recognize the conditions.

Especially, according to the second embodiment, in local transmission, since whether transmission information is notified or not is controlled by checking whether operator information is input or not, a user can arbitrarily determine whether the transmission information is managed on the PC side.

As needed, the server machine 202 can manage transmission information of all users on a LAN and, individual transmission information of users is transferred to the client machines of the users. Each user can independently manage remote transmission and local transmission.

The present invention may be applied to a system constituted by a plurality of machines (e.g., a host computer, an interface device, a reader, a printer, and

the like) or to a system constituted by one machine (e.g., a copying machine or a facsimile apparatus).

A program code of software for realizing the above embodiments is supplied to an apparatus connected to various devices or a computer in the system such that various devices are operated to realize the functions of the embodiments, and the various devices are operated by the system or the computer (CPU or MPU) of the system according to the program stored in the system or the computer. This arrangement can also be included in the scope of the present invention.

In this case, the program code itself of software realizes the functions of the embodiments. The program code itself and a means for supplying the program code to the computer, e.g., a storage medium in which the program code is stored, constitute the present invention.

As a storage medium for storing the program code, a floppy disk, a hard disk, an optical disk, a CD-ROM, a magnetic tape, a non-volatile memory card, a ROM, or the like can be used.

When the computer executes the supplied program code, the functions of the above embodiments are realized. In addition, when the functions of the embodiments are realized in such a manner that the program code operates together with an OS (Operating

System) operating in the computer or another application software, the program code is included in the embodiments of the present invention as a matter of course.

Furthermore, after the supplied program code is stored in a memory arranged on a function extension board of the computer or a function extension unit connected to the computer, a CPU or the like arranged on the function extension board or the function extension unit performs part or all of the actual processes on the basis of the designation of the program code, and the functions of the embodiments are realized by the processes. This case is also included in the present invention as a matter of course.

The present invention has been described above on the basis of the preferred embodiments. However, the present invention is not limited to the embodiments, and various modification can be effected within the range described in the claims.

WHAT IS CLAIMED IS:

1. A data communication system comprising:

connection means connected to a data processing terminal;

operation means for inputting a manual designation caused by an operator;

transmission means for transmitting data on the basis of the designation input by said operation means; and

notification means for notifying information related to data transmission performed by said transmission means based on the designation input by said operation means to the data processing terminal through said connection means in accordance with a change in state of said data communication system.

2. A data communication system according to claim 1, wherein said transmission means transmits data on the basis of a second designation from the data processing terminal connected through said connection means.

3. A data communication system according to claim 1, wherein the information notified by said notification means includes at least one of a transmission

destination, a transmission time, and a number of transmission pages.

4. A data communication system according to claim 1, wherein said notification means performs notification in accordance with a change in information to be notified.

5. A data communication system according to claim 1, wherein said notification means notifies information related to data transmission upon completion of the data transmission performed by said transmission means.

6. A data communication system according to claim 1, wherein said notification means notifies data transmitted by said transmission means.

7. A data communication system comprising:

connection means connected to a data processing terminal;

operation means for inputting a manual designation caused by an operator;

designation means for designating an ID by an operation of said operation means;

transmission means for transmitting data on the

basis of the designation input by said operation means; and

notification means for notifying information related to data transmission performed by said transmission means based on the designation input by said operation means to the data processing terminal through said connection means in accordance with the ID designation performed by said designation means.

8. A data communication system according to claim 7, wherein said notification means does not perform notification in an absence of an ID designated by said designation means.

9. A data communication system according to claim 7, wherein the ID designated by said designation means is information representing a user on a network.

10. A data communication system according to claim 7, wherein said transmission means transmits data on the basis of the designation from the data processing terminal connected through said connection means.

11. A data communication system according to claim 7, wherein information notified by said notification

means includes at least one of a transmission destination, a transmission time, and a number of transmission pages.

12. A data communication system according to claim 7, wherein said notification means notifies data transmitted by said transmission means.

13. A method of controlling a data processing terminal, connected to a data communication system for performing data communication with a destination, for controlling the data communication system, comprising:

the reception step of receiving information related to data communication performed by a manual operation performed by the data communication system;

the designation step of designating data communication to the data communication system; and

the storage step of independently storing the information received in said reception step and information related to data communication based on the designation in said designation step.

14. A method according to claim 13, wherein information representing a user ID is received in said reception step, and information related to data

communication is stored in an area corresponding to the user ID in said storage step.

15. A method according to claim 13, wherein data transmitted by the data communication system is received in said reception step.

16. A method according to claim 13, wherein the information received in said reception step includes at least one of a transmission destination, a transmission time, and a number of transmission pages.

17. A method of controlling a system having a data communication system for performing data communication with a destination and a data processing terminal for controlling the data communication system, comprising the steps of:

the data communication system:

designating an ID on the basis of a manual operation of the data communication system and performing data communication, and

notifying information related to the data communication to a data terminal, and

said data processing terminal:

designating data communication to the data

communication system,

receiving information notified by the data communication system, and

independently storing information related to data communication based on the designation and the information received from the data communication system.

18. A computer readable program, stored in a storage medium, for controlling a data communication system connected to a data processing terminal, said program comprising:

the input step of inputting a manual designation caused by an operator;

the transmission step of transmitting data based on a designation input in said input step; and

the notification step of notifying information related to data communication performed in said transmission step based on the designation input in said input step to the data processing terminal in accordance with a change in state of the data communication system.

19. A computer readable program, stored in a storage medium, for controlling a data communication system connected to a data processing terminal, said program comprising:

the input step of inputting a manual designation caused by an operator;

the designation step of designating an ID;

the transmission step of transmitting data on the basis of a designation input in said input step; and

the notification step of notifying information related to data communication performed in said transmission step based on the designation input in said input step to the data processing terminal in accordance with the ID in said designation step.

20. A computer readable program, stored in a storage medium, for controlling a data processing terminal, connected to a data communication system for performing data communication with a destination, for controlling the data communication system, said program comprising:

the reception step of receiving information related to data communication performed by a manual operation of the data communication system;

the designation step of designating data communication to the data communication system; and

the storage step of independently storing the information received in said reception step and information related to the data communication based on

the designation in said designation step.

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ABSTRACT OF THE DISCLOSURE

In a system in which a facsimile apparatus is connected to a LAN (Local Area Network) to which a plurality of computer terminals are connected, image data obtained by reading an original image by the scanner of the facsimile apparatus under the control of the operation unit of the facsimile apparatus is transmitted to a destination designated by the operation unit. In this operation, if a user ID is designated, transmitted image data and information (destination, transmission time/date, or the like) related to transmission is transferred to the LAN to notify the information to a user corresponding to the user ID. In this manner, data communication performed by a local operation of the facsimile apparatus and data communication performed by a remote designation from the computer terminal can be managed together.

0005708-120396

FIG. 1

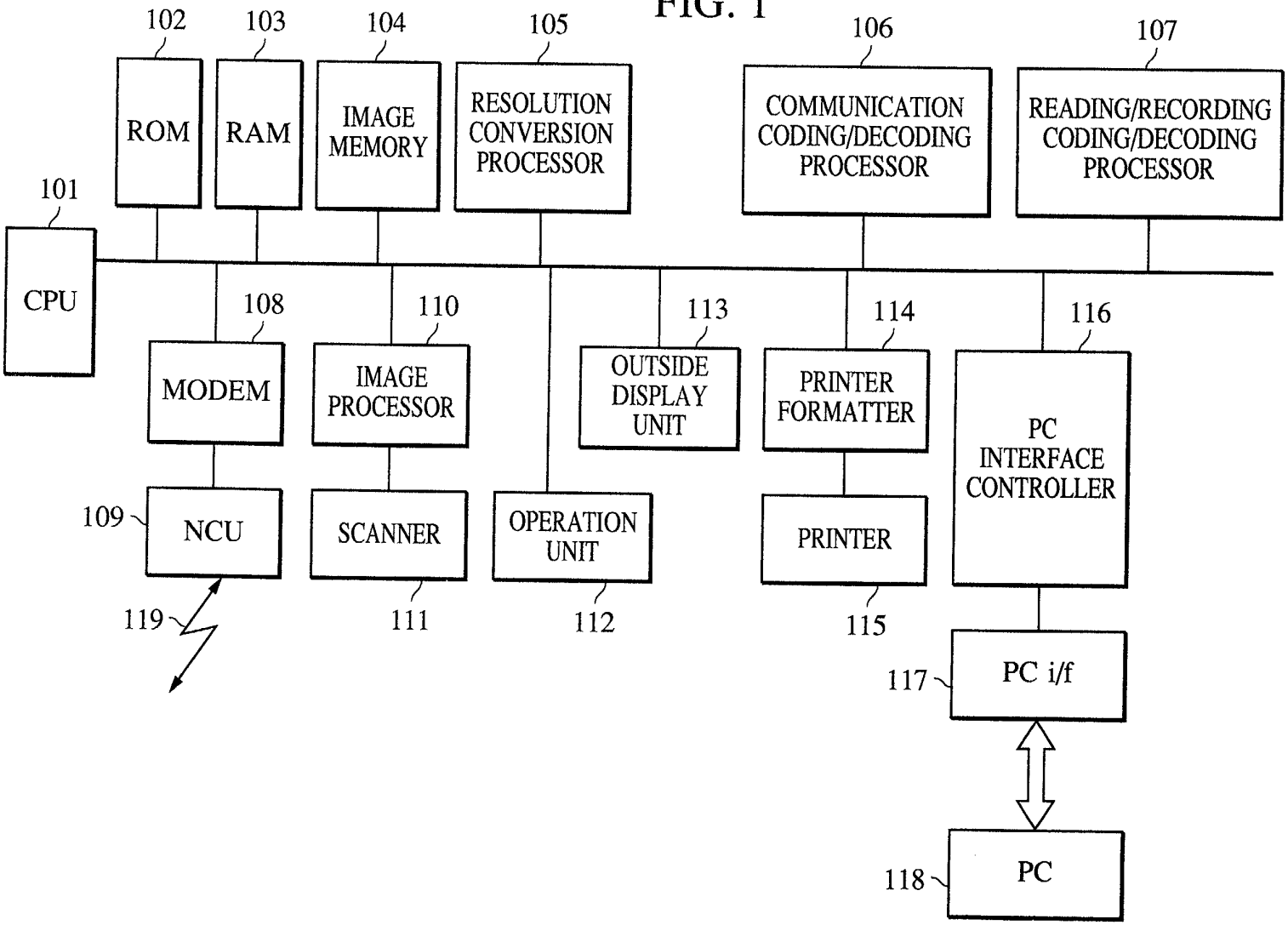
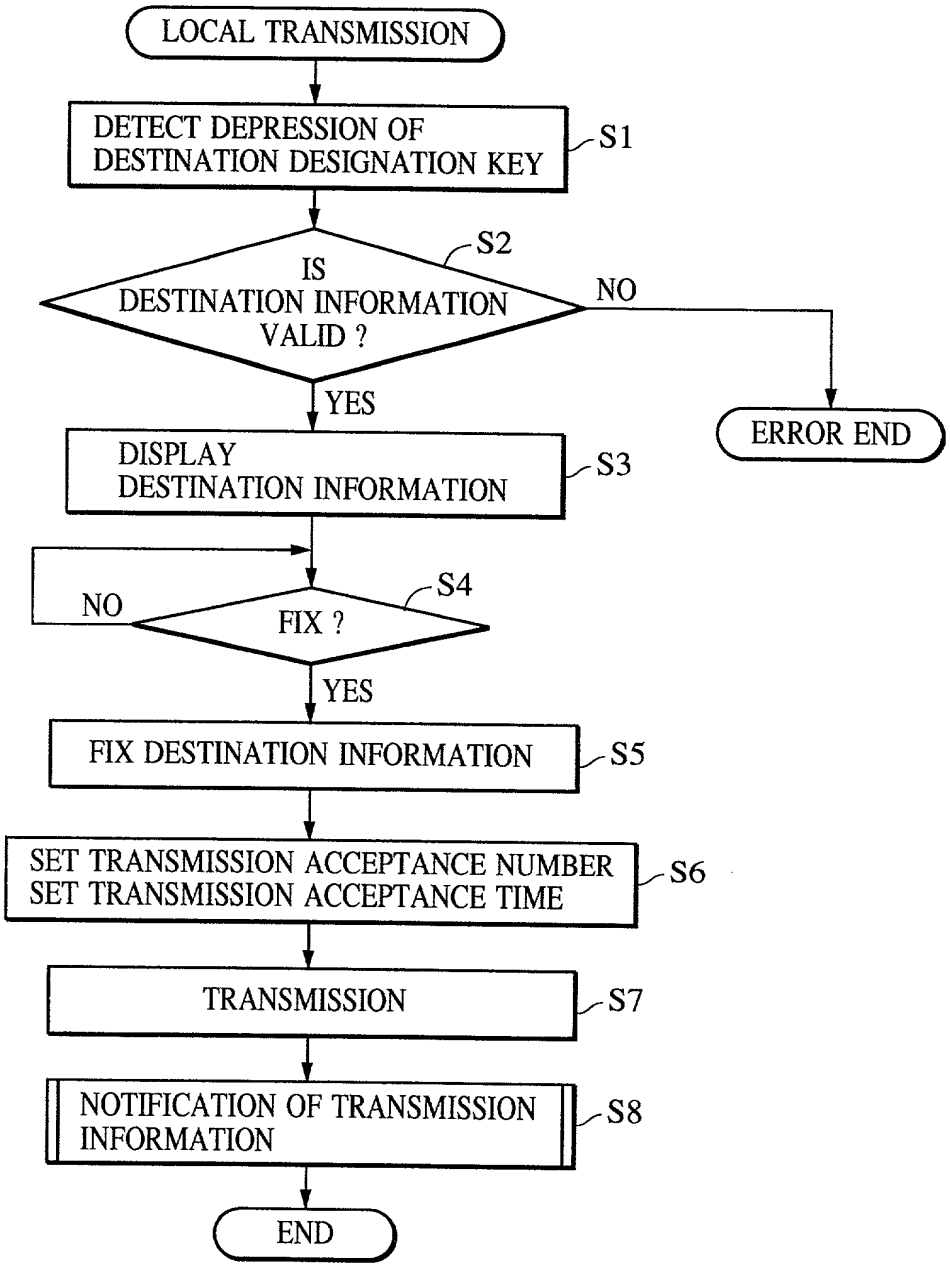

102
103
104
105
106
107
ROM
RAM
IMAGE MEMORY
RESOLUTION CONVERSION PROCESSOR
COMMUNICATION CODING/DECODING PROCESSOR
READING/RECORDING CODING/DECODING PROCESSOR
101
CPU
108
110
113
114
116
MODEM
IMAGE PROCESSOR
OUTSIDE DISPLAY UNIT
PRINTER FORMATTER
PC INTERFACE CONTROLLER
109
NCU
SCANNER
OPERATION UNIT
PRINTER
119
111
112
115
117
PC i/f
118
PC

FIG. 2



US 2006/0268360 A1 Nov. 30, 2006

FIG. 3

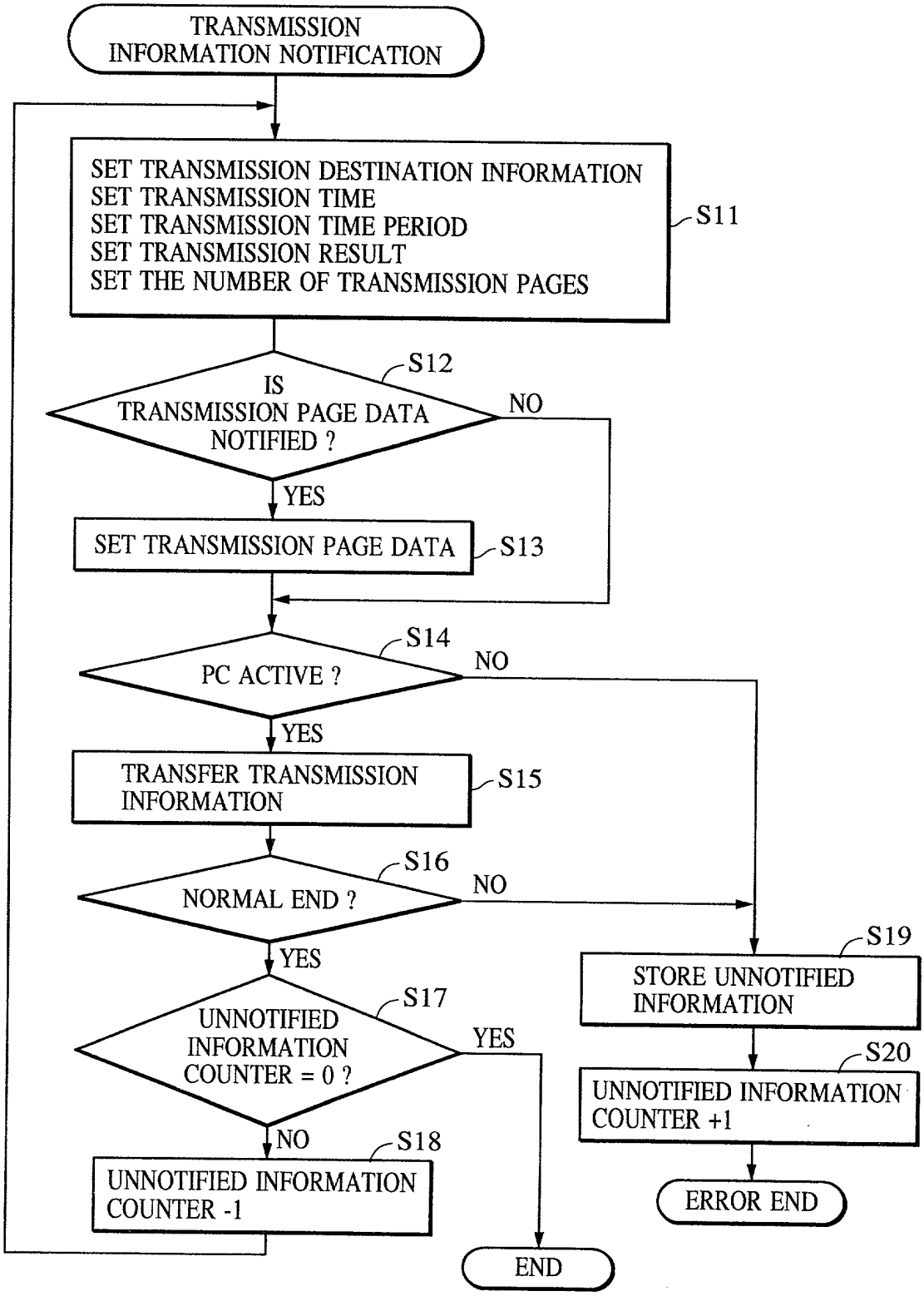

TRANSMISSION INFORMATION NOTIFICATION
SET TRANSMISSION DESTINATION INFORMATION
SET TRANSMISSION TIME
SET TRANSMISSION TIME PERIOD
SET TRANSMISSION RESULT
SET THE NUMBER OF TRANSMISSION PAGES
S11
S12
IS TRANSMISSION PAGE DATA NOTIFIED ?
NO
YES
SET TRANSMISSION PAGE DATA
S13
S14
PC ACTIVE ?
NO
YES
TRANSFER TRANSMISSION INFORMATION
S15
S16
NORMAL END ?
NO
YES
S17
UNNOTIFIED INFORMATION COUNTER = 0 ?
YES
NO
S18
UNNOTIFIED INFORMATION COUNTER -1
END
S19
STORE UNNOTIFIED INFORMATION
S20
UNNOTIFIED INFORMATION COUNTER +1
ERROR END

FIG. 4

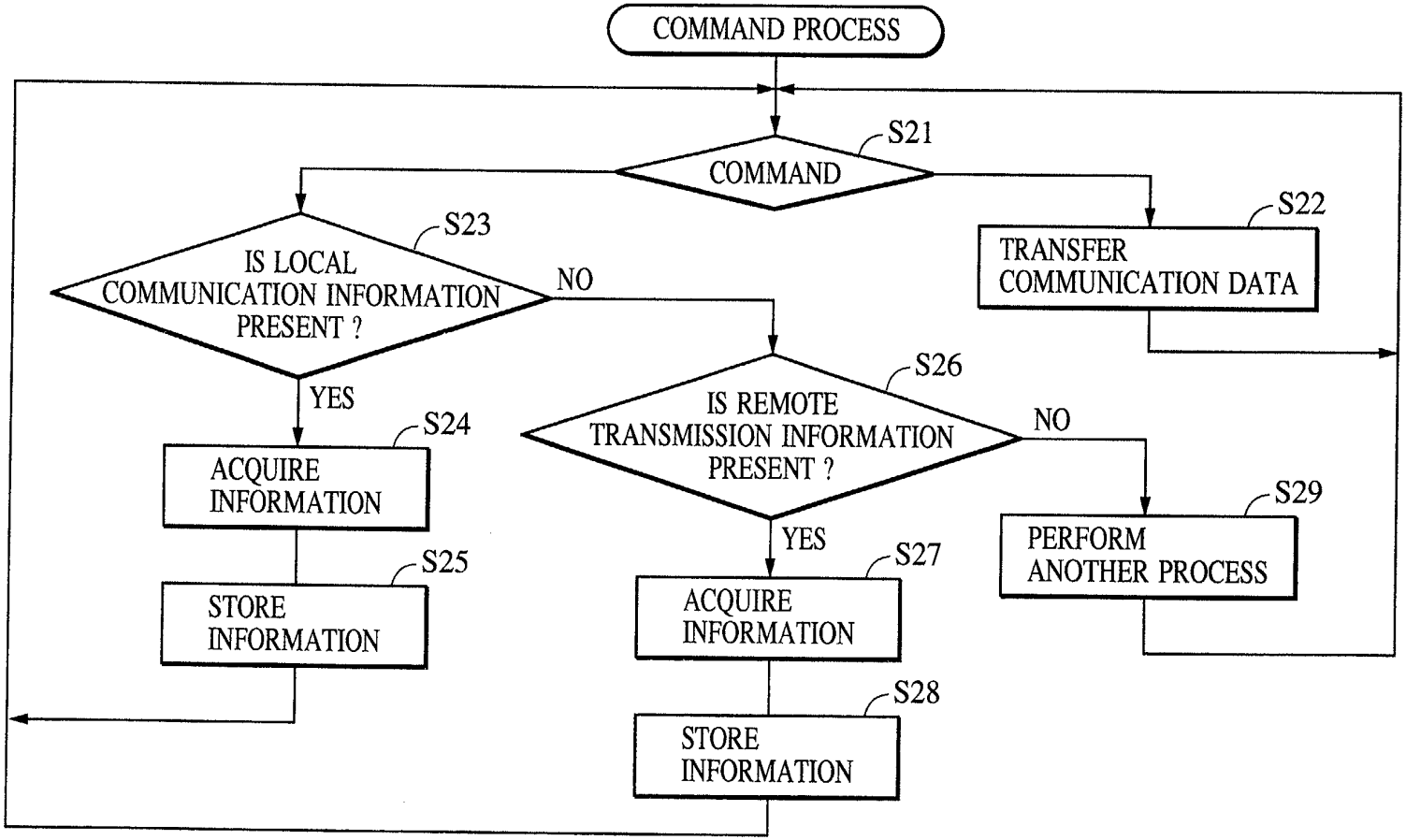

COMMAND PROCESS
S21
COMMAND
S22
TRANSFER COMMUNICATION DATA
S23
IS LOCAL COMMUNICATION INFORMATION PRESENT ?
NO
YES
S24
ACQUIRE INFORMATION
S25
STORE INFORMATION
S26
IS REMOTE TRANSMISSION INFORMATION PRESENT ?
NO
YES
S27
ACQUIRE INFORMATION
S28
STORE INFORMATION
S29
PERFORM ANOTHER PROCESS

FIG. 5

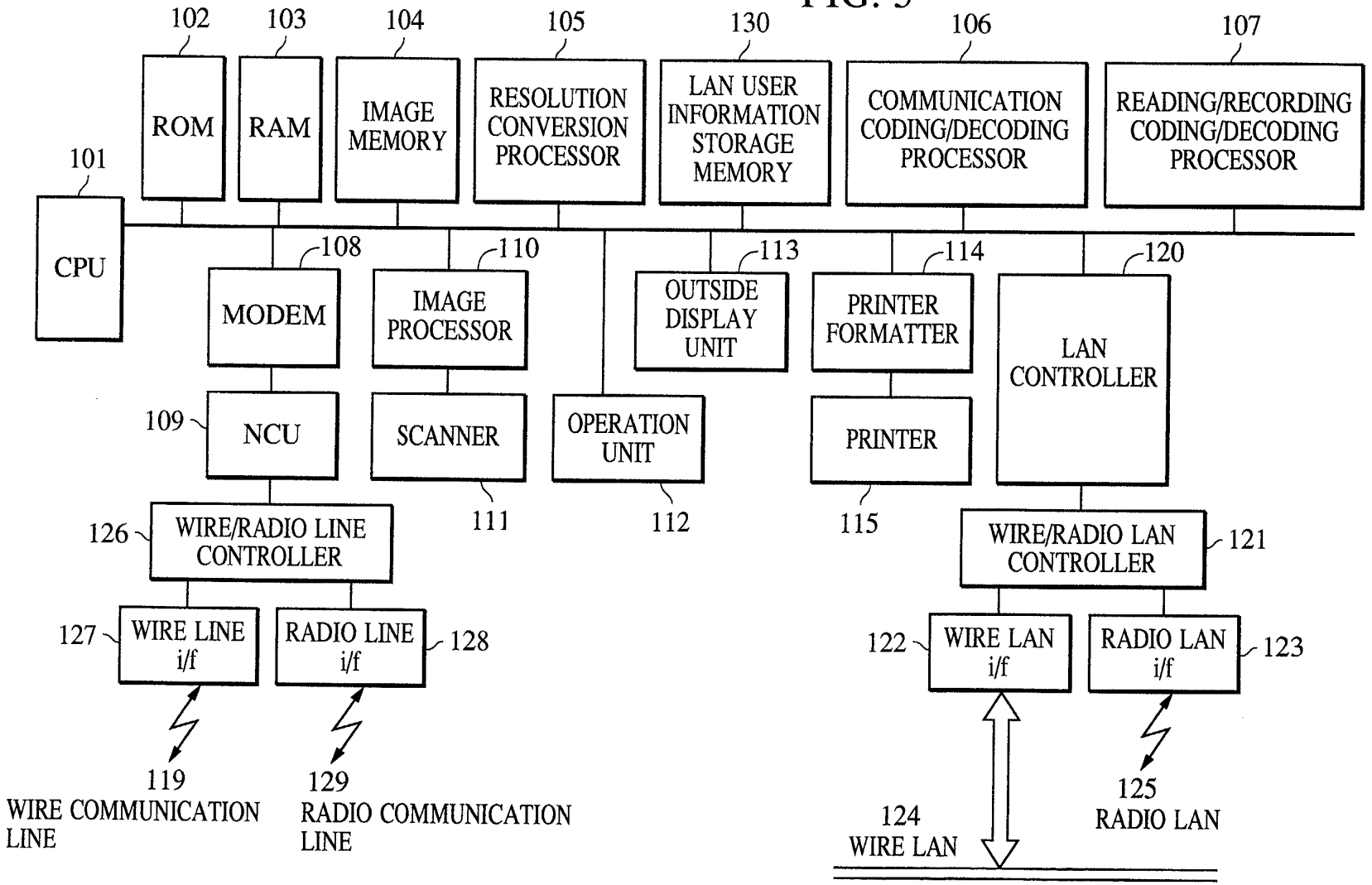

102
103
104
105
130
106
107
ROM
RAM
IMAGE MEMORY
RESOLUTION CONVERSION PROCESSOR
LAN USER INFORMATION STORAGE MEMORY
COMMUNICATION CODING/DECODING PROCESSOR
READING/RECORDING CODING/DECODING PROCESSOR
101
CPU
108
110
113
114
120
MODEM
IMAGE PROCESSOR
OUTSIDE DISPLAY UNIT
PRINTER FORMATTER
LAN CONTROLLER
109
NCU
SCANNER
OPERATION UNIT
PRINTER
111
112
115
126
WIRE/RADIO LINE CONTROLLER
WIRE/RADIO LAN CONTROLLER
121
127
WIRE LINE i/f
RADIO LINE i/f
128
122
WIRE LAN i/f
RADIO LAN i/f
123
119
WIRE COMMUNICATION LINE
129
RADIO COMMUNICATION LINE
124
WIRE LAN
125
RADIO LAN

FIG. 6

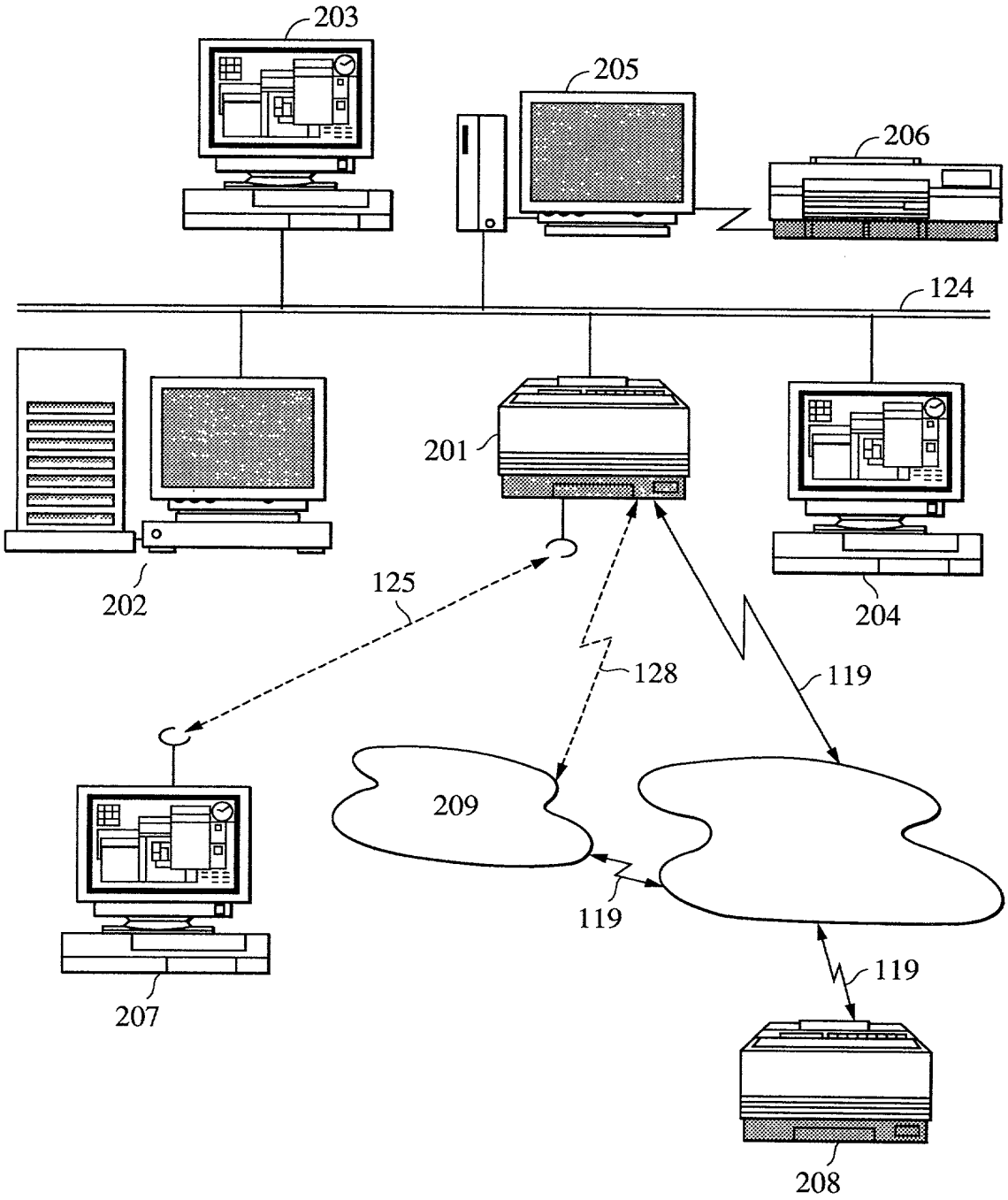


FIG. 7A

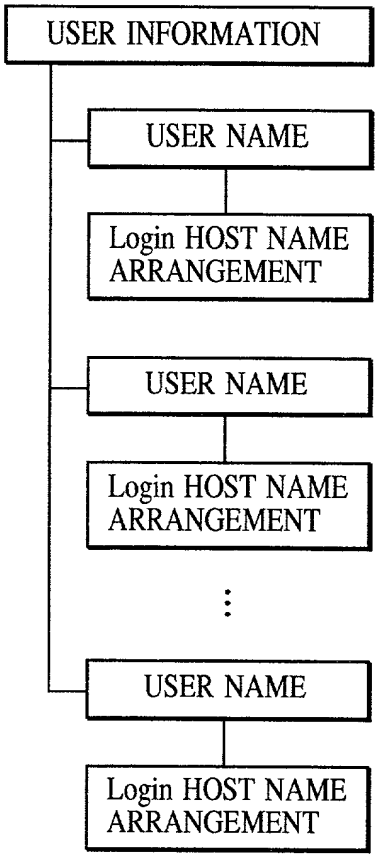


FIG. 7B

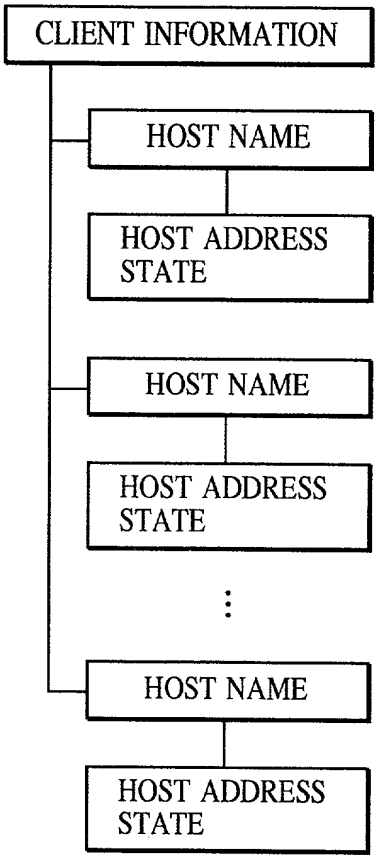


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FIG. 8

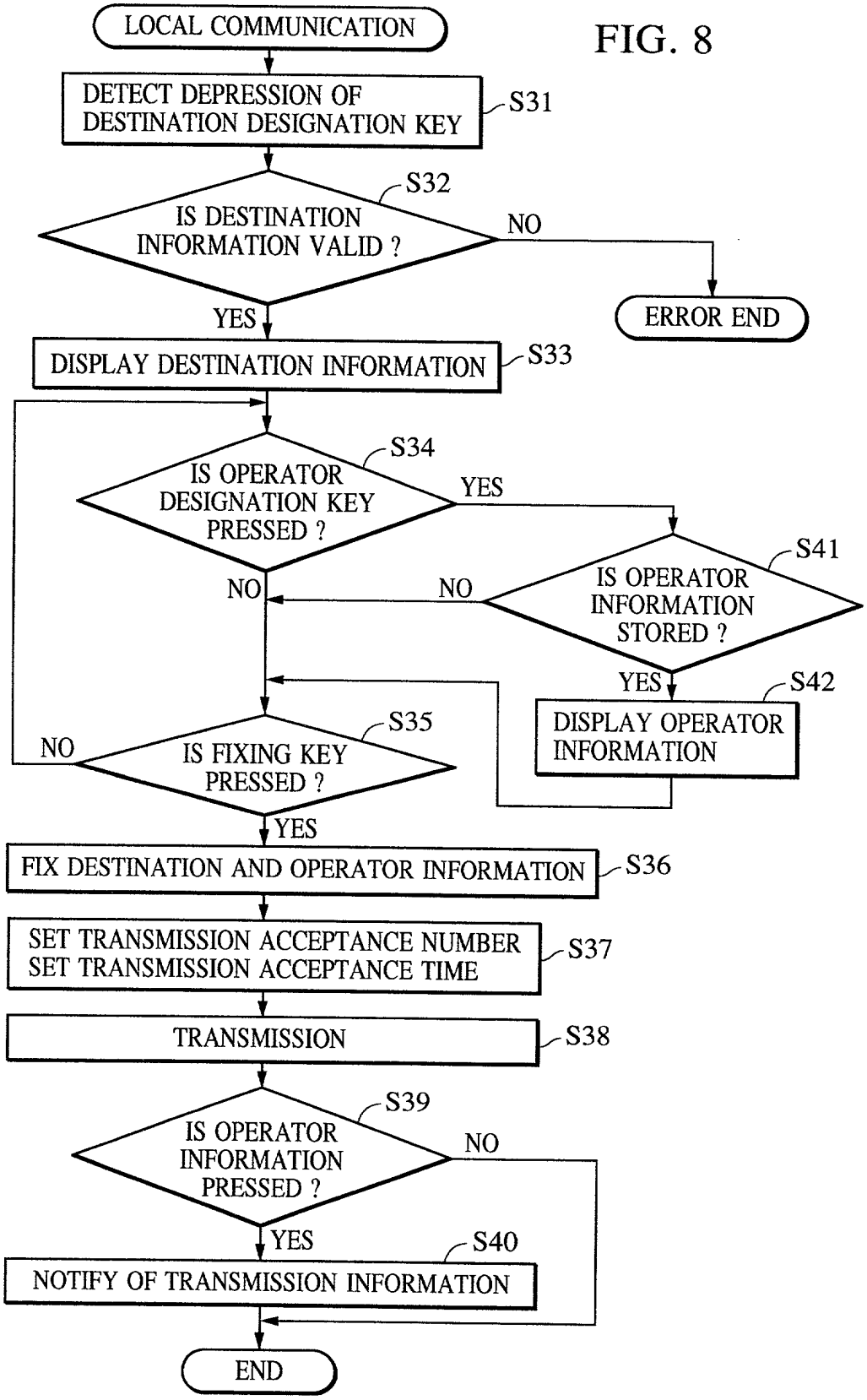

LOCAL COMMUNICATION
DETECT DEPRESSION OF DESTINATION DESIGNATION KEY
S31
IS DESTINATION INFORMATION VALID ?
S32
NO
ERROR END
YES
DISPLAY DESTINATION INFORMATION
S33
IS OPERATOR DESIGNATION KEY PRESSED ?
S34
YES
NO
IS OPERATOR INFORMATION STORED ?
S41
NO
YES
DISPLAY OPERATOR INFORMATION
S42
IS FIXING KEY PRESSED ?
S35
NO
YES
FIX DESTINATION AND OPERATOR INFORMATION
S36
SET TRANSMISSION ACCEPTANCE NUMBER
SET TRANSMISSION ACCEPTANCE TIME
S37
TRANSMISSION
S38
IS OPERATOR INFORMATION PRESSED ?
S39
NO
YES
NOTIFY OF TRANSMISSION INFORMATION
S40
END

FIG. 9

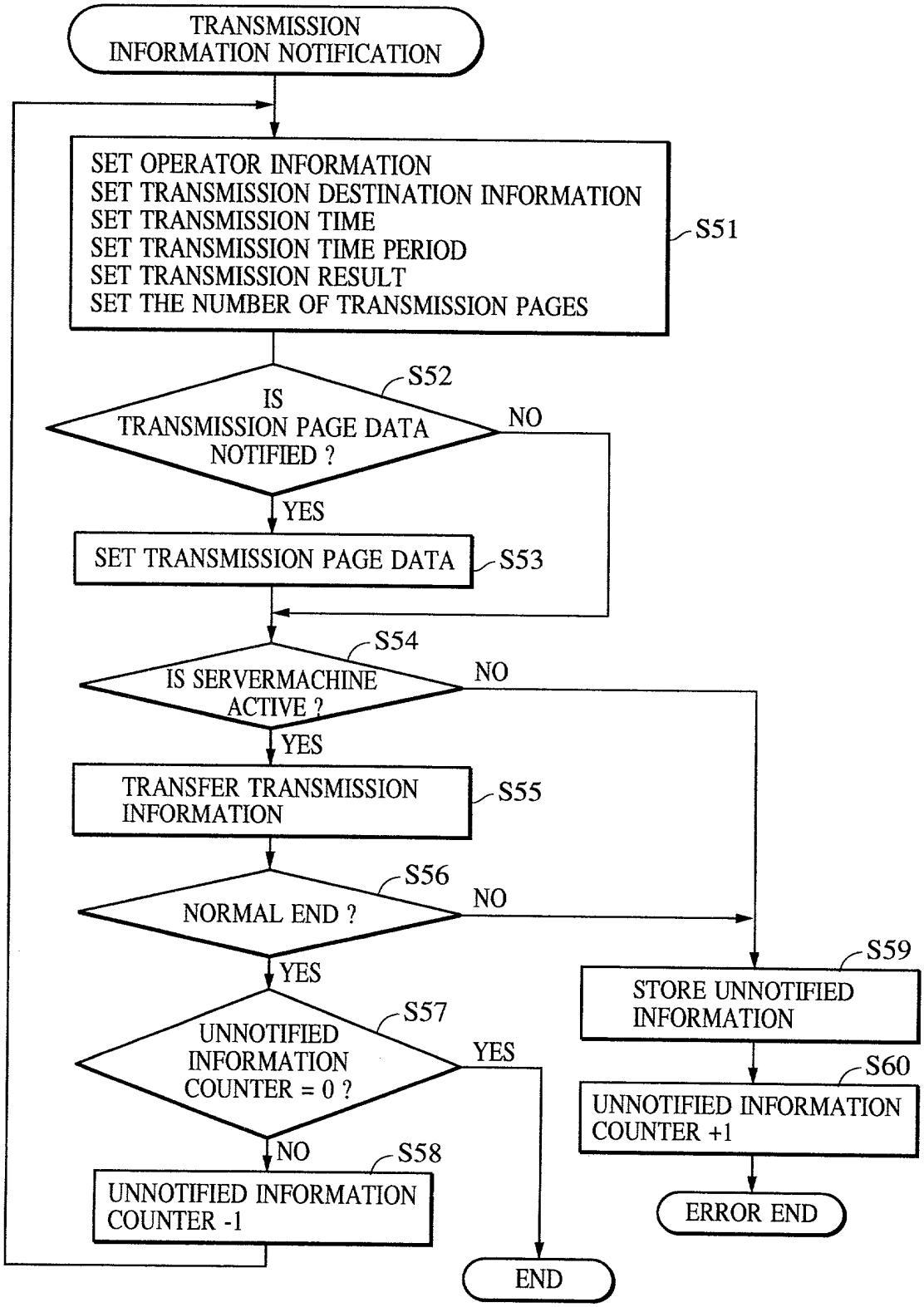

TRANSMISSION INFORMATION NOTIFICATION
SET OPERATOR INFORMATION
SET TRANSMISSION DESTINATION INFORMATION
SET TRANSMISSION TIME
SET TRANSMISSION TIME PERIOD
SET TRANSMISSION RESULT
SET THE NUMBER OF TRANSMISSION PAGES
S51
S52
IS TRANSMISSION PAGE DATA NOTIFIED ?
NO
YES
SET TRANSMISSION PAGE DATA
S53
S54
IS SERVERMACHINE ACTIVE ?
NO
YES
TRANSFER TRANSMISSION INFORMATION
S55
S56
NORMAL END ?
NO
YES
S57
UNNOTIFIED INFORMATION COUNTER = 0 ?
YES
NO
S58
UNNOTIFIED INFORMATION COUNTER -1
END
S59
STORE UNNOTIFIED INFORMATION
S60
UNNOTIFIED INFORMATION COUNTER +1
ERROR END

FIG. 10

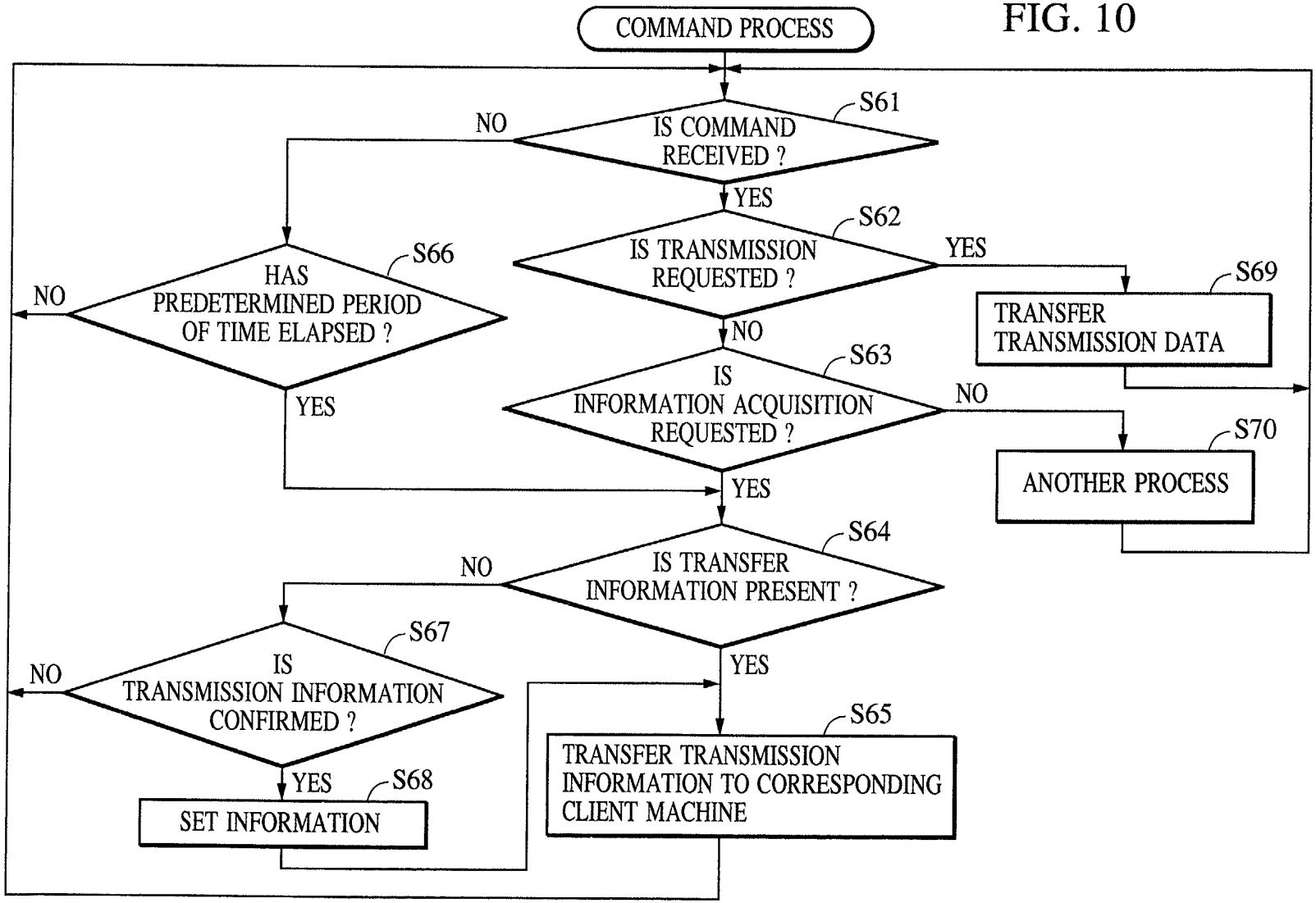
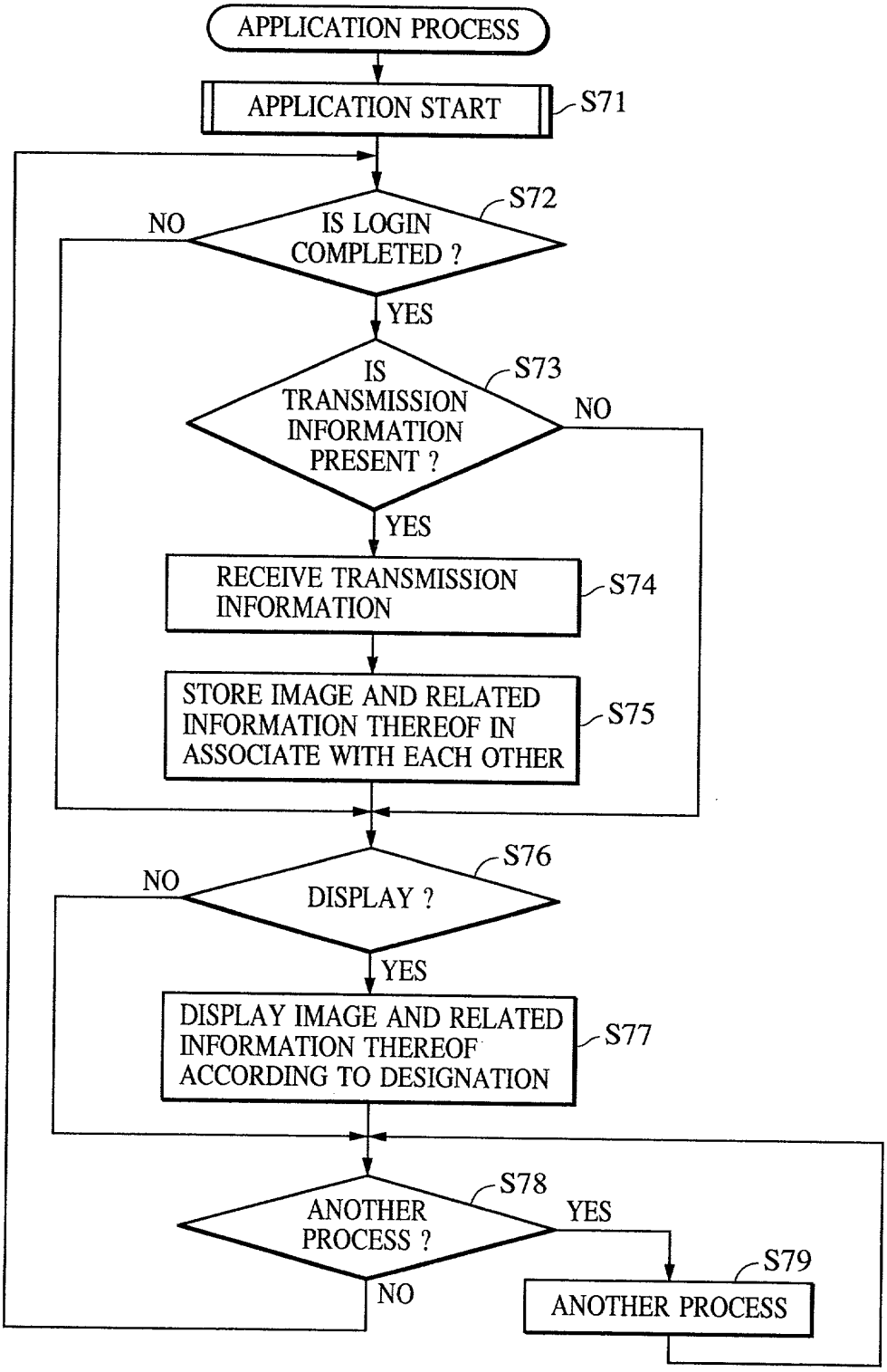

COMMAND PROCESS
S61
IS COMMAND RECEIVED ?
NO
YES
S62
IS TRANSMISSION REQUESTED ?
YES
S69
TRANSFER TRANSMISSION DATA
NO
S63
IS INFORMATION ACQUISITION REQUESTED ?
NO
S70
ANOTHER PROCESS
YES
S66
HAS PREDETERMINED PERIOD OF TIME ELAPSED ?
NO
YES
S64
IS TRANSFER INFORMATION PRESENT ?
NO
YES
S67
IS TRANSMISSION INFORMATION CONFIRMED ?
NO
YES
S68
SET INFORMATION
S65
TRANSFER TRANSMISSION INFORMATION TO CORRESPONDING CLIENT MACHINE

FIG. 11


APPLICATION PROCESS
APPLICATION START
S71
S72
IS LOGIN COMPLETED ?
NO
YES
S73
IS TRANSMISSION INFORMATION PRESENT ?
NO
YES
RECEIVE TRANSMISSION INFORMATION
S74
STORE IMAGE AND RELATED INFORMATION THEREOF IN ASSOCIATE WITH EACH OTHER
S75
S76
DISPLAY ?
NO
YES
DISPLAY IMAGE AND RELATED INFORMATION THEREOF ACCORDING TO DESIGNATION
S77
S78
ANOTHER PROCESS ?
YES
NO
S79
ANOTHER PROCESS

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   - ☐ Papers contain improper margins. Each sheet must have a left margin of at least 2.5 cm (1") and top, bottom and right margins of at least 2.0 cm (3/4").
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